A.7.2 Metals Loading

Historical mean wet weather concentrations of total and dissolved copper, lead, and zinc were plotted to show the spatial variability of concentrations in the Chollas Creek Watershed with respect to the potential metals point sources from the inventory in the BLTEA Report (WESTON, MOE, and LWA, 2005). The loadings from subwatersheds making up the Chollas Creek Watershed were estimated using land use and parameter values calibrated for the watershed model used in the Dissolved Metals TMDL. Loadings were presented as relative annual loadings (relative to each other) and normalized loadings per acre for each parameter (see metals loading by land use figures on Figure 16 through Figure 21). Each subwatershed was characterized as high, medium, or low.

The highest copper loadings appear in several of the upper subwatersheds of the northern and southern drainage areas, the middle of south fork, and downstream of the confluence (an area a with relatively high industrial land use). The relative normalized copper loadings per acre indicate a similar distribution of high loadings, if limited to the upper most subwatersheds of tributaries of the north and south forks and the downstream drainage areas.

The relative annual and normalized annual lead loading per acre (Figure 18 and Figure 19, respectively) indicate similar distribution of higher loading subwatersheds to those of copper. There are fewer high lead loading subwatersheds for the normalized annual lead loading per acre compared to copper. Results from sampling at SD8(1) indicate higher concentrations compared to the south fork.

Similar distribution of relative and normalized annual loading for zinc compared to the lead and copper loadings is indicated on Figure 20 and Figure 21. There is greater similarity in the normalized annual loadings per acre between the three metals than in the relative annual loading. Based on the normalized per acre loading for the three metals, the upper northwestern drainage area of the north fork, the middle of the north fork, and the lower portion of the watershed are characterized by the highest loading.

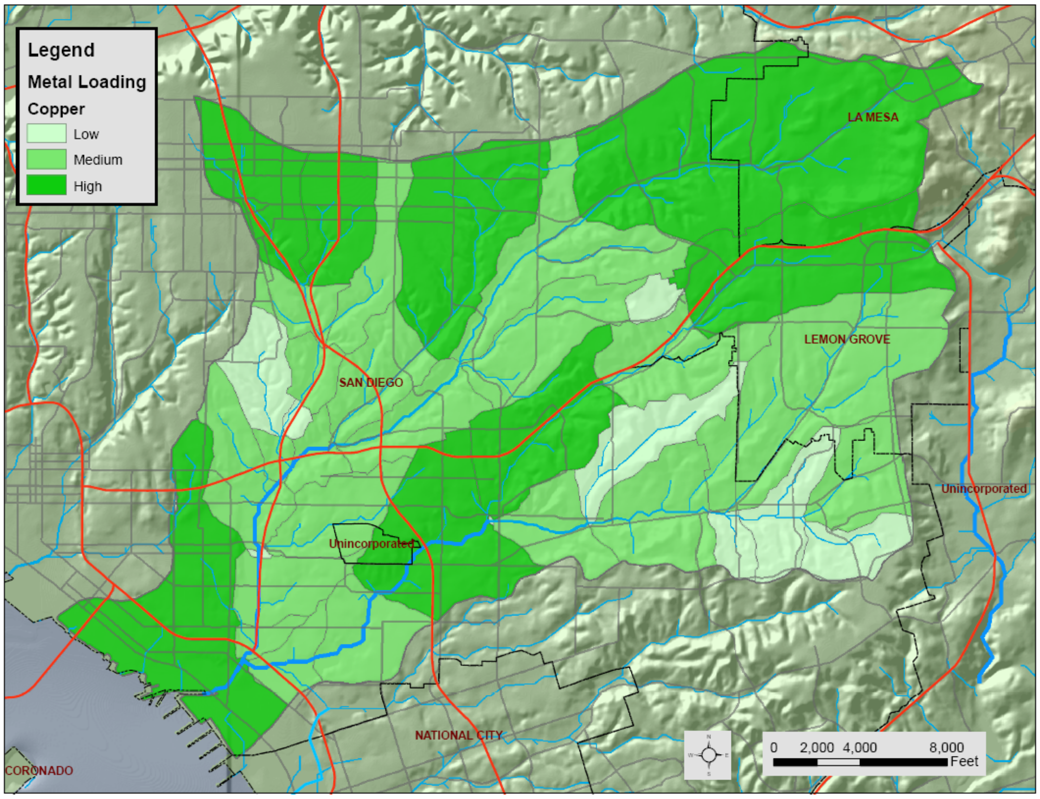

Figure 16. Relative Annual Copper Loading in Chollas Creek (Weston, 2006)

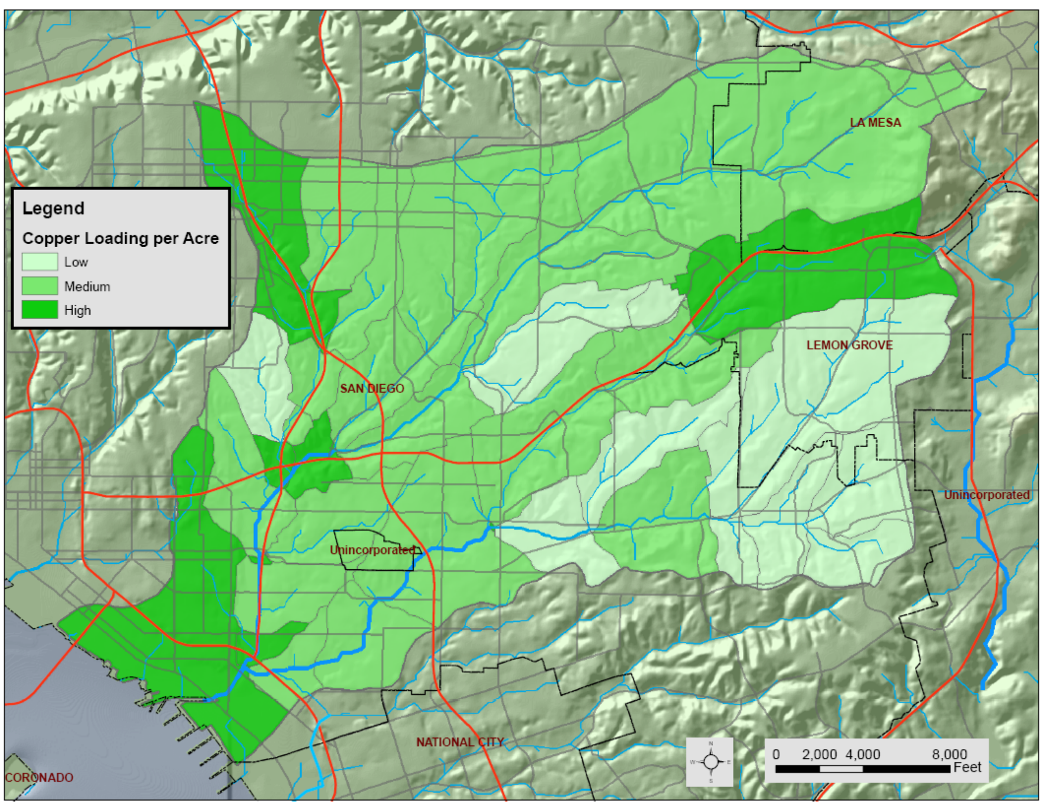

Figure 17. Relative Normalized Annual Copper Loading per Acre in Chollas Creek Watershed (Weston, 2006)

APPENDIX A

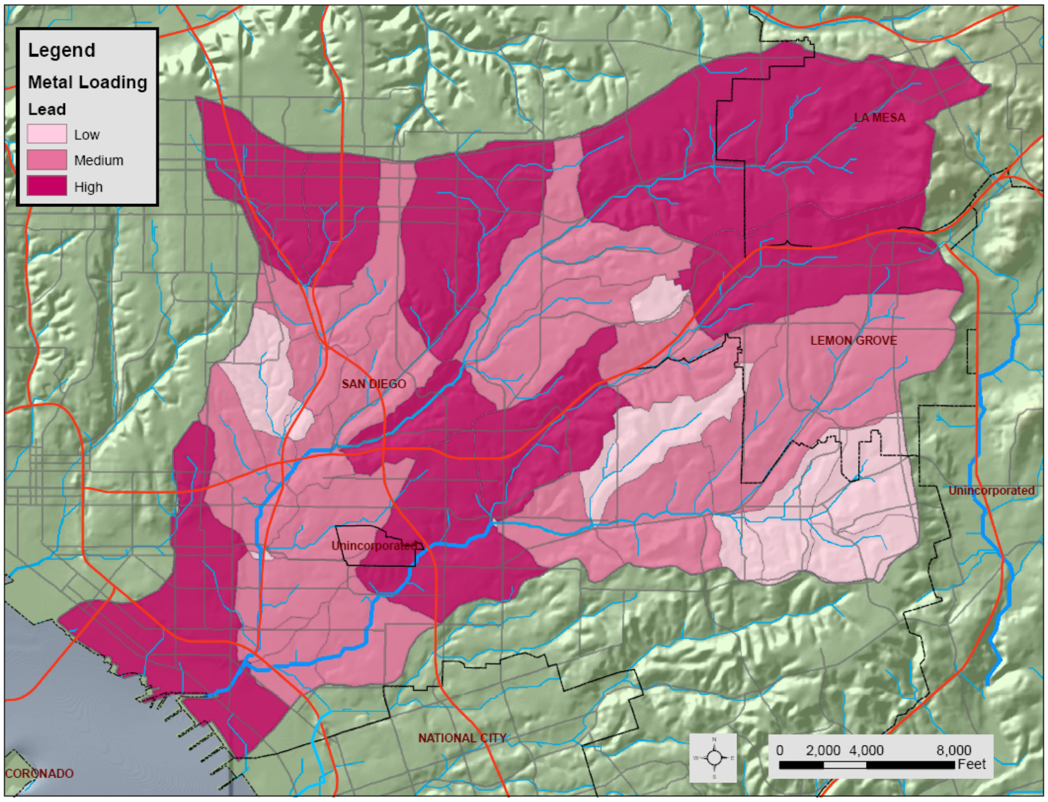

Figure 18. Relative Annual Lead Loadings in Chollas Creek (WESTON, 2006)

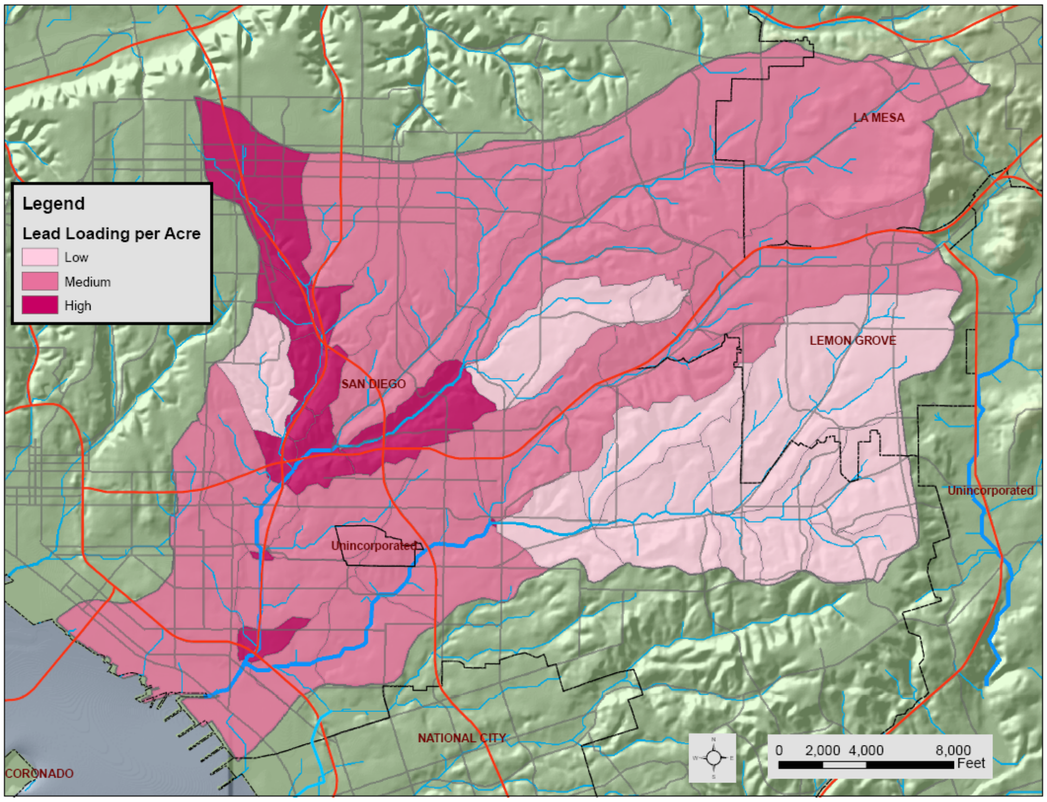

Figure 19. Relative Normalized Annual Lead Loading per Acre in Chollas Creek Watershed (WESTON, 2006)

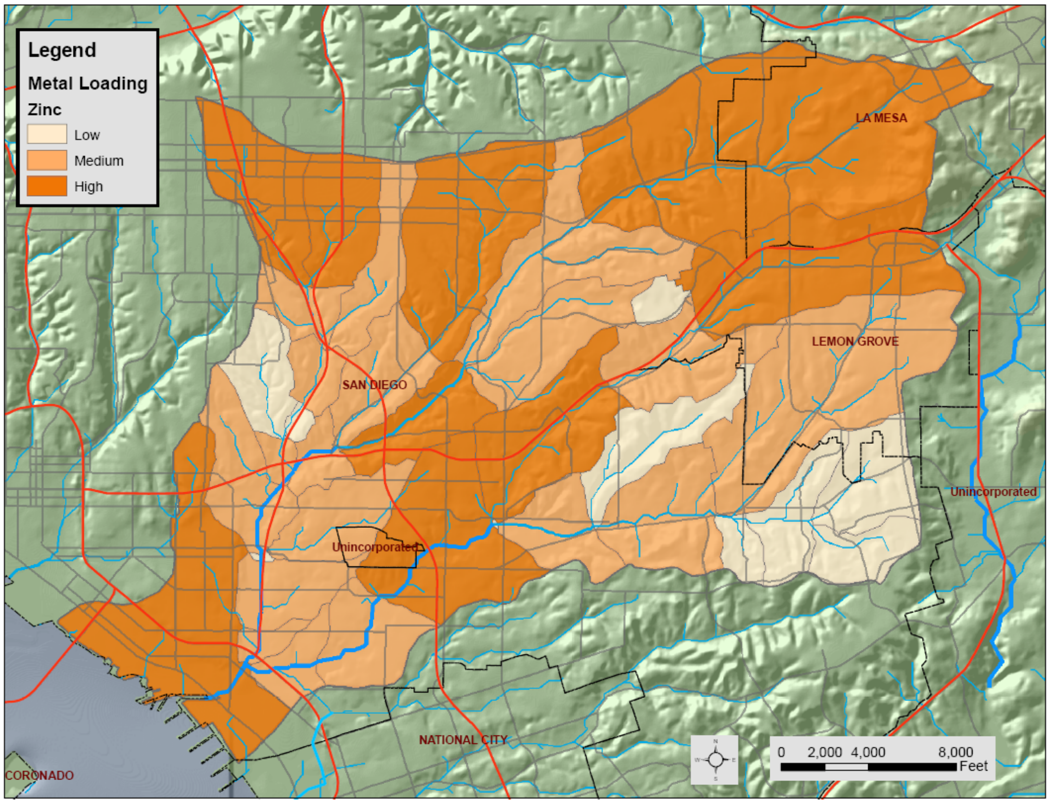

Figure 20. Relative Annual Zinc Loading in Chollas Creek (WESTON, 2006)

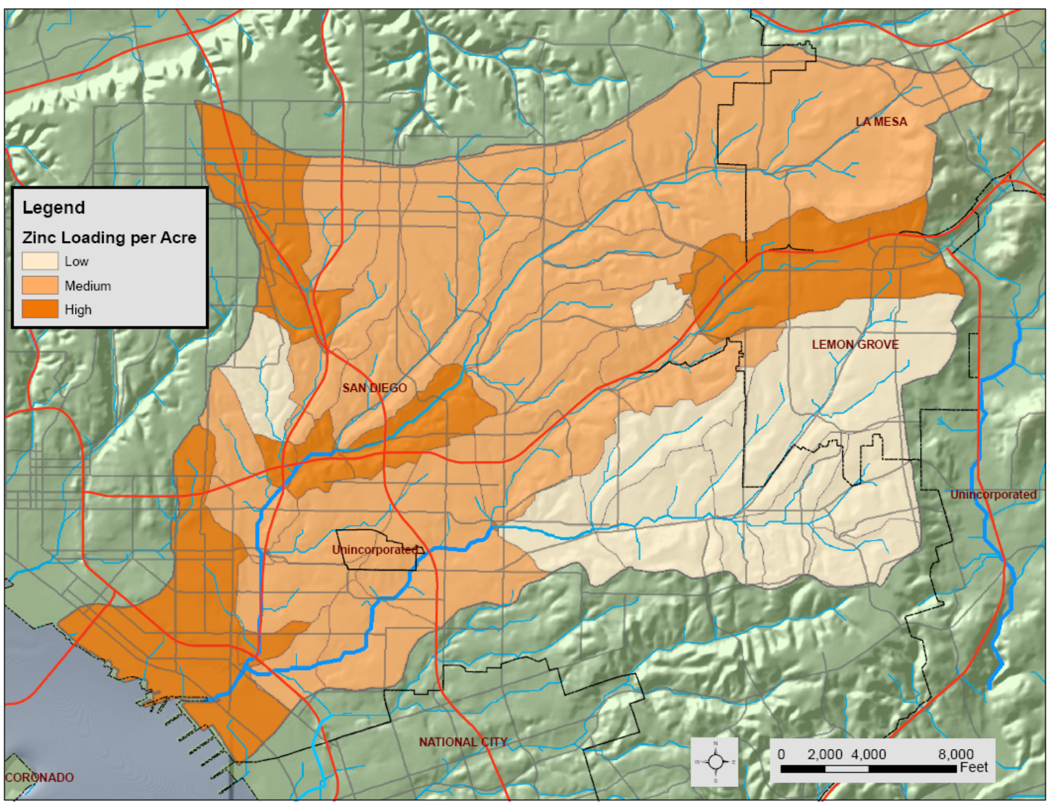

Figure 21. Relative Normalized Annual Zinc Loading per Acre in Chollas Creek Watershed (WESTON, 2006)